REMARKS/ARGUMENTS

Reconsideration of this application is requested. Claims 11-22 are in the case.

I. DOUBLE PATENTING

Claims 1-3 and 5 stand rejected under 35 U.S.C. §101 as allegedly claiming the same invention as claims 1-3 and 6-11 of U.S. Patent 6,667,699. Claims 1, 2 and 6-10 are alleged to directly correspond with patented claims 1, 2 and 7-11. Claims 3 and 5 are alleged to recite the same invention as patented claims 3 and 6.

In response, and without conceding to the merit of this rejection, claims 1-10 have been cancelled without prejudice, and replaced by new claims 11-22. These claims are not the same as cancelled claims 1-11. In claim 11, the incoming data is compared with dictionary data, and the encoder also determines whether there is a full or partial match. Claim 11 and the claims dependent thereon are thus of different scope to claim 1 in the '699 patent.

In claim 19, the reference to content addressable memory (CAM) has been replaced by a reference to a dictionary. In the decompressor, there is no need for a fast CAM. The reason is as follows. To code incoming data in the compressor, the incoming data needs to be compared with every entry in the dictionary extremely fast to determine if there is a match. CAM consequently requires a complex circuit. At the decompressor, however, the input signal defines the dictionary location and so no search is required. The skilled reader will readily appreciate that a regular addressable memory will retrieve the dictionary entry immediately to provide the decompressed

signal. This is the straightforward operation of, for example, a random access memory, and so the complexity of CAM is not required.

In the method claim 22, the restriction to tuples of a fixed length has been removed. The skilled reader will appreciate that tuples of different lengths can be used in the invention. What is important is that incoming tuples are compared with tuples of the same length in the dictionary, and this is defined in the claim. The examples given in the specification include a tuple length of 3 (CAT/SAT, page 4, second paragraph) as well as the four byte tuples. Although this is a prior art example, the skilled reader will have no difficulty in appreciating that this feature has nothing to do with the present invention. Dependent claim 15 has been added which is identical to claim 14 except that it depends from claim 13.

Withdrawal of the outstanding same-invention double patenting rejection is now believed to be in order. Such action is respectfully requested.

II. OBVIOUSNESS-TYPE DOUBLE PATENTING

Claim 4 stands rejected on alleged obviousness-type double patenting grounds over claim 4 of U.S. Patent 6,667,699. In response, new claim 14 (corresponding to previous claim 4) does not constitute obviousness-type double patenting in view of its indirect dependency on independent claim 11 which clearly does not constitute obviousness-type double patenting over the claims of the '699 patent. Withdrawal of the outstanding obviousness-type double patenting rejection is accordingly respectfully requested.

III. THE OBVIOUSNESS REJECTION

Claims 1-10 stand rejected under 35 U.S.C. §103(a) as allegedly unpatentable over U.S. Patent 6,169,499 to Cooper in view of U.S. Patent 6,121,901 to Welch. That rejection is respectfully traversed.

As now claimed, the invention is directed to a lossless data compression system comprising an input for data to be compressed, a dictionary comprising a content addressable memory and a coder for encoding the location of matching data in the dictionary and the type of a full or partial match. A run length encoder is connected to receive the output of the coder, the run length encoder being arranged to count the number of times a match consecutively occurs at the same predetermined dictionary location.

At the outset, it is noted that the title of Cooper (referring to an "embedded" RLE arrangement) is something of a misnomer, because the function of the Lempel Ziv coding and the RLE coder are totally separate. Cooper's RLE technique works in a very similar manner to the prior art acknowledged in the introduction to the present application. Referring to Cooper at column 4, lines 26 to 32, the Look Ahead Buffer is consulted to see whether there is a run of characters in the input stream. This process happens before the data is applied to the LZW coder. If a run is detected, "the LZW process diverts to run-length encoding to process the character run." In contrast with the run-length encoding of the present invention, the Cooper arrangement applies RLE to the incoming data stream. This is explained in more detail at column 6, line 59 through column 7, line 5. If the Current Character is the same as the next n (e.g. n=3) look ahead characters, the YES branch of block 74 is taken to run processing block 75.

The run processing is illustrated in Figure 4. There is no interaction between the run processing in Figure 4 and the LZW processing of Figure 3. When the character run ends, the NO branch is taken from block 84 and, after the count is output, control returns to Figure 3. This operation is also clear from the description of Figure 9 referred to by the Examiner, especially column 14, lines 40 to 43. It states "all strings that exist in the dictionary 35 will be matched in the block 64 of Fig. 3 prior to invoking run processing at block 74." Once a run is detected at action number 8 control proceeds to the block 75 for run processing. At the decompressor, the individual input codes are examined to determine if they represent a run count (column 10, line 6 to line 11). If the data does represent a run then run processing is invoked (column 11, lines 19 to 27) and ceases at the end of the run. The run length decompressor receives the input codes and not the output of the decoder (the run processing and the LZW processing are entirely separate).

Cooper does not disclose or suggest "run length encoder connected to receive the output of the coder," as claimed in claim 11. It also fails to disclose or suggest "a run length decoder register connected to receive the output of decoder" as claimed in claim 19 or "loading each search tuple in turn into the same address in the dictionary" as claimed in claim 22. Even adding a CAM to the disclosure of Cooper fails to disclose the present invention as defined in the claims.

Based on the above, it is clear that one of ordinary skill would not have been motivated to arrive at the presently claimed invention in view of the combined disclosures of Cooper and Welch. Absent any such motivation, a *prima facie* case of

obviousness is not generated in this case. Reconsideration and withdrawal of the obviousness rejection are accordingly respectfully requested.

IV. INFORMATION DISCLOSURE STATEMENT

Attached is a PTO-1449 listing references in connection with this present application. Also attached is a copy of each of those references together with the requisite PTO IDS fee. The Examiner is requested to initial the attached PTO-1449 and to return a copy of the initialed document to the undersigned with the next paper to issue in this application.

Favorable action on this application is awaited.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: _____
Leonard C. Mitchard
Reg. No. 29,009

LCM:lfm
1100 North Glebe Road, 8th Floor
Arlington, VA 22201-4714
Telephone: (703) 816-4000
Facsimile: (703) 816-4100